

Claims

1. A method of lining a storage tank comprising the steps of: -
  - 5 providing a keying means on the inner surface of the tank;
  - applying a corrosion barrier coating to the keying means;
  - 10 applying an interstitial grid to the tank;
  - 15 laying up a pliable glass reinforced plastics material onto the grid; and exposing the glass reinforced plastics material to ultra violet rays to cure the material and form a hardened inner liner shell for the tank.
2. A method as claimed in claim 1 wherein the interstitial grid is provided by pre-formed sheets of flexible material.
- 20 3. A method as claimed in claim 1 or 2 wherein the grid is adhesively bonded to the corrosion barrier coating.
4. A method as claimed in any preceding claim wherein the grid has a facing material applied to receive the glass reinforced plastics material.
- 25 5. A method as claimed in claim 4 wherein the facing is a polyester mat bonded to one side of the grid.
6. A method as claimed in any preceding claim wherein at least portion of the grid is of a plastics material.

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7. A method as claimed in any of claims 1 to 6 wherein at least portion of the grid is of a composite material.
8. A method as claimed in any of claims 1 to 5 wherein at least portion of the grid is of a mesh material.  
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9. A method as claimed in claim 8 wherein the mesh is a metal mesh.
10. A method as claimed in claim 9 wherein the mesh is an aluminium mesh.  
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11. A method as claimed in claim 6 wherein the grid is of high density polyethylene material.
12. A method as claimed in any preceding claim wherein, for lining, the tank is divided into a number of zones, which are separately lined.  
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13. A method as claimed in claim 12 wherein the final zone to be lined is adjacent a manway into the tank.
20. 14. A method as claimed in any of claims 2 to 13 wherein the sheets of pliable glass reinforced plastics material applied to the grid in section, the marginal edges of the sections being butt jointed.
15. A method as claimed in claim 14 wherein the joints between adjacent sheets are covered with a GRP tape.  
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16. A method as claimed in any preceding claim including the step of:-  
applying a coating to the hardened GRP liner.

17. A method as claimed in any preceding claim wherein the keying means is provided by grit blasting the inner surface of the tank.

18. A method as claimed in any preceding claim including the step of: -

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cleaning the inner surface of the tank prior to providing the keying means.

10 19. A method as claimed in claim 18 wherein the inner surface is cleaned by water jet cleaning.

20. A method as claimed in any preceding claim wherein the corrosion barrier is a glassflake epoxy resin.

15 21. A method as claimed in claim 20 wherein the corrosion barrier layer is applied to a dry film thickness of greater than 1000 microns.

22. A method as claimed in any preceding claim including the steps, prior to application of a corrosion layer of: -

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inspecting the internal wall of the tank; and

repairing any imperfections in the tank wall.

25 23. A method as claimed in any preceding claim wherein the GRP is exposed to UV by directing UV lamps at the GRP layer.

24. A method as claimed in any preceding claim wherein the GRP material is covered with an outer protective film which is removed to expose the GRP material to UV.

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25. A method as claimed in any of claims 16 to 24 wherein the GRP coating is a glassflake epoxy resin.
26. A method as claimed in any preceding claim wherein the tank is an underground liquid storage tank.  
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27. A tank lining method substantially as hereinbefore described with reference to the accompanying drawings.
- 10 28. A tank whenever lined by a method as claimed in any preceding claim.
29. A tank as claimed in claim 28 having a tank wall, keying means on the inner surface of the tank wall, a corrosion barrier coating applied to the keying means, an interstitial grid applied to the tank, UV cured glass fibre reinforced material laid onto the grid forming a hardened inner liner shell for the tank.  
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30. A tank as claimed in claim 28 or 29 including a leak monitoring transducer in the interstitial space defined by the grid.  
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31. A tank as claimed in any of claims 28 to 30 including a vapour monitoring means in the interstitial space defined by the grid.
32. A tank as claimed in claim 31 wherein the vapour monitoring means includes a vapour sampling tube.  
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33. A tank as claimed in any of claims 30 to 32 including an alarm means associated with the monitoring means.
- 30 34. A tank as claimed in claim 33 wherein the alarm is mounted remote from the tank.

35. A tank substantially as hereinbefore described with reference to the accompanying drawings.